Mean (SEM) areas under glucose and insulin curves after mixed meals containing bread made with fine and coarse wholemeal flour in healthy patients with ileostomies and non-insulin dependent diabetics

	Area under glucose curve (mmol/l.min)		Area under insulin curve (mU/l.min)	
	Fine flour	Coarse flour	Fine flour	Coarse flour
Healthy patients with ileostomies	141 (27)	93 (17)	3992 (442)	3095 (228)
Mean paired difference	48		898	
95% Confidence interval	−9 to 104		16 to 1779	
Non-insulin dependent diabetics	683 (78)	553 (54)	4157 (534)	3397 (476)
Mean paired difference	130		760	
95% Confidence interval	9 to 252		364 to 1155	

coarsely milled wholemeal flour mixed with 0·75 g sodium bicarbonate, 1·5 g cream of tartar, and 50 g water and baked at 210°C for 15 minutes and eaten with 21 g Cheddar cheese, 8 g butter, 300 ml tea, and 50 ml milk. All subjects ate the two breakfasts in random order seven days apart after a 12 hour fast. The patients with ileostomies received snacks free of starch three and five and a half hours after the breakfasts. Venous blood samples were taken during the fasting period and at 10 20, 30, 40, 50, 60, 75, 90, 120, 150, and 180 minutes after the beginning of the test meal. A sample was also taken at 240 minutes for the diabetics. In one patient with an ileostomy venous access was not possible. Plasma insulin and glucose concentrations were assayed by standard methods.[1] The areas under the postprandial concentration curves were calculated as those above the fasting concentrations. Effluent from the ileostomies was collected for eight hours after the meal and stored at −20°C. Effluent starch was measured with amyloglucosidase.[4] Significance was determined by Student's *t* test.

In both groups the meal containing bread made from coarse flour resulted in lower plasma glucose and insulin concentrations than that containing bread made from fine flour (table). Unabsorbed starch was 42% higher after the meal made from coarse flour (mean (SEM) 563 (86) *v* 397 (55) mg; mean difference 167 mg, 95% confidence interval 50 to 284 mg).

Comment

We found that breads made from coarse and fine flour have different effects in middle aged people and in non-insulin dependent diabetics as well as in young people,[1] even when the bread is part of a mixed meal. Coarse flour evokes less insulinaemia, which suggests that if regularly consumed it might decrease the risk of hypertension, atherosclerosis, gall stones, and obesity. It also allows more starch to escape from the small intestine. Thus the risk of some colonic diseases, including cancer, might be reduced if coarse flour was eaten regularly and combined with other less completely digested starchy foods.

Diabetics are recommended to add cracked or whole grains to their bread to reduce glycaemia.[5] Our data show that there is a simpler alternative, and we suggest that eating bread made from coarsely milled flour might improve diabetic control if bread forms a substantial proportion of the daily food intake.

We thank Dr Simon Hook of the Flour Millers and Bakers Research Association for providing flour, Bristol and Weston District Medical Research Committee for financial help, Dr R J M Corrall and Miss A Moffatt.

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(Accepted 8 March 1989)

Role of infant feeding practices in development of Crohn's disease in childhood

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Br Med J 1989;**298**:1617-8

One hypothesis on the aetiology of Crohn's disease suggests that environmental factors initiate intestinal inflammation in genetically susceptible people. To determine the effects of breast feeding on the subsequent development of the disease we examined practices of infant feeding among affected children and unaffected siblings.

Patients, methods, and results

We sent a questionnaire to 145 families with at least one child aged under 18 with Crohn's disease that had been established by radiological, endoscopic, and histological criteria. The study was approved by the hospital's human subject review committee.

We used Student's *t* test to compare mean values, a conditional logistic regression model to analyse potential risk factors for the disease within families in which unaffected siblings were available as controls, and an SAS computer program[1] to analyse matched data with a variable number of cases and controls.

Of 145 families, 128 (88%) with a total of 325 children completed the questionnaires. Adopted children, half siblings, and 23 children with the disease but without an unaffected sibling were excluded. The remaining 114 patients and their 180 unaffected siblings from 107 families comprised the study group. Over half (56%) of the children with Crohn's disease were boys, but this proportion was not significantly different from that in unaffected siblings (50%). Although the median age in the two groups was similar (Crohn's disease 15·7 years; siblings 17·2 years), the mean (SD) age of the children with the disease was lower (16·1 (3·2) years *v* 18·1 (7·6) years, $p<0·01$). Birth order and month of birth showed the same distributions among patients and controls.

Analysis of potential risk factors showed that patients were less likely to have been breast fed (relative risk 3·6, 95% confidence interval 1·4 to 9·0, $p<0·01$), more likely to have received formula food from birth (3·1, 1·3 to 7·4, $p<0·02$), and more likely to have had diarrhoeal illnesses during infancy (2·7, 1·5 to 5·8, $p<0·02$). Sex, premature delivery, type of milk used for bottle feeding, age at introduction of solid foods, and length of exclusive and total length of breast feeding did not differ between patients and controls.

Multivariate analyses showed that only two factors—lack of breast feeding and episodes of diarrhoeal disease during infancy—were independently associated with later development of Crohn's disease (table). The interdependence of breast feeding and formula feeding was shown by a reduction in the significance of breast feeding in the three variable model and by the significance of formula feeding when it was combined

Relation between breast feeding, formula feeding, and diarrhoeal disease during early infancy with subsequent development of Crohn's disease in childhood. Results of relative risk estimate for each factor were adjusted for presence of other factor(s) in model with matched multivariate analysis

	Adjusted relative risk	95% Confidence interval	p Value for variable	p Value for model
Two variable model				0·0006
Not breast fed	3·8	1·5 to 9·5	0·005	
Had diarrhoea	2·9	1·3 to 6·4	0·010	
Two variable model				0·003
Formula fed	2·9	1·2 to 7·0	0·020	
Had diarrhoea	2·5	1·2 to 5·6	0·020	
Three variable model				0·002
Not breast fed	3·0	1·0 to 9·4	0·060	
Formula fed	1·4	0·5 to 4·5	0·520	
Had diarrhoea	2·8	1·2 to 6·2	0·012	

with diarrhoea in the two variable model. The three variable model showed that formula feeding did not itself contribute to the risk of Crohn's disease.

Comment

In this study lack of breast feeding was a risk factor associated with later development of Crohn's disease. Bergstrand and Hellers showed that affected adults had been breast fed less commonly and for a shorter duration than matched controls.[2] Two other studies, however, did not find lack of breast feeding to be a risk factor.[3,4]

The findings in case-control studies often depend on the choice of control groups, and to evaluate the aetiological role of environmental factors in a genetically influenced disorder unaffected siblings are more appropriate controls than unrelated subjects. Whorwell *et al* also noted an increased prevalence of infantile diarrhoea among adults with Crohn's disease.[3] Although the prevalence of infantile diarrhoea is influenced by feeding practices, diarrhoea was also independently associated with the development of the disease. Recall bias, however, cannot be completely excluded.

Crohn's disease may develop in genetically susceptible people as a result of an immunological response to an unidentified antigen in the mucosa. Such an immunoregulatory abnormality may be influenced by feeding practices in early infancy. Our findings, together with a recent report relating lack of breast feeding to an increased risk of childhood lymphoma,[5] should encourage further research into the long term effects of feeding with human milk.

This work was supported by a grant from the Canadian Foundation for Ileitis and Colitis and the Variety Club of Toronto. SK received a clinical research fellowship from Nordic Laboratories, and PS received a career scientist award from the Ontario Ministry of Health. Data from the study were presented at the annual meeting of the American Gastroenterological Association in New Orleans, May 1988, and published in abstract form.

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(Accepted 14 February 1989)

Effects of burglary on elderly people

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Br Med J 1989;**298**:1618-9

The devastating effect of crime on the health and wellbeing of elderly people has been reported.[1] Yet despite considerable publicity in the lay press it is unclear whether elderly people are more susceptible to crime. A report from the United States suggested that they may be burgled less often than younger people.[2] We carried out a survey on the prevalence, effects, and possible risk factors of burglary among elderly people.

Subjects, methods, and results

We assessed 315 consecutive admissions and outpatient referrals (mean age of patients 74, range 65-93) to a short stay geriatric medical service. Patients with cognitive dysfunction (43/315) were excluded. A further 100 outpatients and patients admitted to hospital (mean age 37, range 17-63) served as a younger group for comparison. Information was gathered by questionnaire and results analysed with χ^2 tests.

Of the 272 elderly people, 80 had been burgled, some several times, during the previous two years. A total of 122 burglaries were reported, a yearly rate of 22%. This compared with 16 burglaries reported by the control group, a yearly rate of 8% ($p<0·01$).

Social isolation, impaired mobility, and lack of security equipment were all more common among the elderly victims (table). Of the 29 victims who had had multiple burglaries, 22 were not independently mobile. In a quarter of the cases the burglars had gained entry by using a confidence trick, particularly by posing as collectors for charity or as officials for utilities.

Potential risk factors for burglary among elderly people. Figures are numbers (percentages)

	Victims (n=80)	Non-victims (n=192)	p Value for difference
Social isolation*	34 (43)	42 (22)	<0·001
Impaired mobility	38 (48)	60 (31)	<0·025
Lack of security equipment	55 (69)	102 (53)	<0·025

*Alone by day and night.

Eleven of the elderly people had required medical treatment, five in hospital. None of the younger people had required medical attention. Psychological after effects were reported by 72 of the victims. These included fear of further burglary (57), anxiety or depression (36), sleep disorder (46), and fear of going out (32). Seventeen reported a reduction of their mobility after the burglary. Eleven had left their homes, eight of whom had stayed with relatives; seven had eventually returned to their own homes. One patient had moved house and three entered nursing homes.

Comment

The ability of elderly people to maintain a homoeostatic balance in a stressful physical or psychological environment is diminished. Examples include the increased susceptibility to hypothermia with increased age,[3] the effects of air pollution on elderly patients with chest disease,[4] and increased morbidity and mortality in elderly people after the death of their spouses.[5] We have highlighted the effects of an environmental